DOCUMENT RESUME

ED 410 780 HE 030 315

AUTHOR Lee, Virginia S.; Williford, Lynn E.
TITLE Differences in African-American and White Students' Perceptions of the Postsecondary Large Class.
PUB DATE 1997-03-00
NOTE 37p.; Paper presented at the Annual Meeting of the American Educational Research Association (Chicago, IL, March 1997).
PUB TYPE Reports - Research (143) -- Speeches/Meeting Papers (150) -- Tests/Questionnaires (160)
EDRS PRICE MF01/PC02 Plus Postage.
DESCRIPTORS Affective Behavior; *Black Students; *Class Size; College Students; Educational Environment; Higher Education; Large Group Instruction; Questionnaires; *Racial Differences; Satisfaction; *Student Attitudes; *Student Evaluation of Teacher Performance; Student Surveys; Tables (Data); Teaching Assistants; *White Students
IDENTIFIERS *African Americans

ABSTRACT

This study compared African-American and white college students' perceptions of the educational environment within large lecture classes. A total of 124 African-American students and 1,143 white students in 27 classes with enrollments of more than 70 students completed surveys as part of a larger study on student perceptions of postsecondary education. Ninety-one instructors also completed surveys on specific teaching and learning practices. While there were many similarities in African-American and white student perceptions, it was found that, overall, African-American students were less satisfied with large classes than were white students. African-American students also rated the affected aspects of the learning process as more important than did white students. African-American students' class ratings were more closely related to their level of satisfaction with their teaching assistants than were white students' ratings. Two appendixes provide data tables and copies of the survey instruments. (Contains 44 references.) (MDM)

****
* Reproductions supplied by EDRS are the best that can be made *
* from the original document. *
****

ED 410 780

Differences in African-American and White Students' Perceptions of the Postsecondary Large Class

Virginia S. Lee, Ph.D.
Center for Teaching and Learning

Lynn E. Williford, Ph.D.
Office of Institutional Research

University of North Carolina at Chapel Hill

BEST COPY AVAILABLE

HE 030 315

PERMISSION TO REPRODUCE AND DISSEMINATE THIS MATERIAL HAS BEEN GRANTED BY

Virginia S. Lee

TO THE EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)

U.S. DEPARTMENT OF EDUCATION
Office of Educational Research and Improvement
EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)

This document has been reproduced as received from the person or organization originating it.

Minor changes have been made to improve reproduction quality.

Points of view or opinions stated in this document do not necessarily represent official OERI position or policy.

Differences in African-American and White Students' Perceptions of the Postsecondary Large Class

Virginia S. Lee, Ph.D.
Center for Teaching and Learning

Lynn E. Williford, Ph.D.
Office of Institutional Research

University of North Carolina at Chapel Hill

Introduction

In the United States, minority students are seeking and achieving admission into postsecondary institutions in increasing numbers. African-American students represent one of the largest of these minority groups. Particularly in predominantly White institutions, however, the retention rates and achievement levels of African-American students are lower than the majority White students. Consequently the retention and achievement of these students is of particular concern to postsecondary institutions.

Successful completion of the freshmen and sophomore years is, of course, a critical milestone in students' academic careers. These are often the most difficult years for students as they make the transition from high schools and communities where they are known to the greater independence and challenges--whether academic, social, or emotional--of postsecondary education. In larger institutions students may take a number of large classes, introductory courses with enrollments exceeding one hundred, three hundred, or more students. Courses like these place real demands on the capacity of young students to exercise initiative, discipline, and independence in learning.

African-Amercain students may face additional challenges as underclassmen, particularly in the context of predominantly White institutions where they are a conspicuous minority. The dominant culture of the instititution may differ substantially from their homes and communites; they may have limited social networks to supply support during a difficult period of transition; and like all students, they may come to these institutions with varying levels of academic preparation. For these reasons large classes may represent especially challenging learning environments for African-American students due to their impersonality and the initiative and independence they require of students in the learning process. Because African-American students may take a preponderance of large classes in their freshmen and sophomore years, understanding better their perceptions and experiences in large classes may be a critical step in improving African-American students' retention and achievement in postsecondary education.

Review of the Literature

There is surprisingly little in the literature about African-American students as learners in postsecondary school environments and about the experiences and perceptions of these students in large classes. On the other hand there is a large, related literature on the achievement of African-American students in higher education in a variety of institutional settings. Together the

two literatures offer insights into some of the factors that contribute to effective learning among African-American students in higher education.

Researchers have investigated the African-American student as learner predominantly in the context of learning styles. However problematic the construct of learning style is (Irvine & York, 1995), Curry's (1983) framework for organizing the learning style literature provides a useful way of organizing both the small learning and large achievement literatures on African American students. It will also help focus the disparate findings of the smaller literature and bring them to bear on the central research questions and findings of the current study.

Curry proposes a layered conception of learning style including basic personality traits (the influences of basic personality on preferred approaches to learning); information processing (the individual's preferred intellectual approach to assimilating information); social interaction (how students interact in the classroom); and instructional preference (the individual's preferred environment for learning). Although intended as a framework for organizing the learning style literature, Curry's conception also suggests a far richer and more complex view of learning than the product of an interaction of a student with an instructional method in a classroom.

Basic Personality Traits

Among basic personality trait approaches, Witkin's (1976) construct of field dependence and independence (or the extent to which a person is influenced by a surrounding field) has been used widely to compare and contrast the tendencies of different learners. Field independent refers to "the tendency to rely primarily on internal referents in a self-consistent way." Field dependence, on the other hand, refers to the "tendency to give credit to external reference." Field dependent learners are more influenced by and sensitive to their environment, including other people. A body of research suggests that field dependent learners are at a disadvantage academically (Witkin and Goodenough, 1981; Witkin et al., 1977) and that minorities tend to be field dependent (Olstad et al., 1981; Ramirez, 1982; Shade, 1984; Prom, 1982).

Information Processing

David Kolb's *Learning Styles Inventory* (1976), based on his theory of experiential learning, is one of the best known instruments utilizing an information processing approach. Utilizing two dimensions--active/reflective and concrete/abstract, the model describes four distinct learning styles: convergers (abstract/active); divergers (concrete/reflective); assimilators (abstract/reflective); and accommodators (concrete/active). Matthews and Hamby (1995) compared the learning styles of high school and college/university students by gender and race (Caucasian, African-American). They found both differences in the distribution of Caucasian and African-American students across the four learning styles and in the degree to which each racial group changed developmentally between high school and college/university. Most notably, there were proportionally more accommodators among African-American college students than their Caucasian counterparts, and the proportion of accommodators among African-American students increased significantly between high school and college. Accommodators' greatest strengths lie in doing things, in carrying out plans and experiments, and becoming involved in new experiences. They excel in situations calling for adaptation to specific immediate circumstances. They also tend to solve problems in an intuitive manner relying on other people for information rather than their own analytical ability (Kolb, 1994). Also, the percentage of assimilators among African-American males decreased significantly between high school and college, while the proportion of convergers among African-American females increased.

Assimilators excel at creating theoretical models, in inductive reasoning, and in assimilating disparate observation into an integrated explanation. On the other hand convergers' strengths lie in the practical application of ideas; they function best in situations, like standardized intelligence tests, where there is a single correct answer or solution to a question or problem (Kolb, 1994).

Social Interaction

By social interaction, Curry referred chiefly to students' attitudes towards learning, their views of instructors and peers, and their reactions to various procedures, all within the context of the classroom. We find nothing in the literature that examines the importance of these factors to learning for African American students in postsecondary institutions in the context of the classroom specifically. An extensive body of literature, however, examines the influence of a variety of factors on the achievement of African-American students generally in a variety of postsecondary settings (e.g., predominantly black and predominantly White institutions).

Particularly for African-American students in predominantly White institutions, the importance of a variety of non-cognitive factors emerges as a prime determinant of academic success. Several studies (Allen, 1986; Gibbs, 1974; Fleming, 1984) note the importance of "fit" or the degree to which the college environment resembles prior school and home experiences. For many African-American students, particularly in predominantly White institutions, the university does not resemble and is often at odds with prior experiences. Similarly, another strand of research explores the importance of "academic integration" to student performance (Davis, 1991; Nettles, 1991; Jackson and Swan, 1991). Academic integration comprises a variety of factors including student satisfaction with faculty relationships, ease of developing close personal relationships, the perception that faculty are good teachers, and general satisfaction with instruction (Nettles, 1991). Tracey and Sedlacek (1985) determined that non-cognitive factors such as positive self-concept, awareness of racism, and the availability of supportive individuals at the university were more predictive of African-American student retention than academic ability. The authors suggest that "a different process is involved in academic achievement for Black and White students" (Tracey and Sedlacek, 1985, p. 409).

Instructional Preference

In Curry's model, instructional preference refers to a multidimensional approach that addresses the variations among learners within the context of the learning process. One such model, Canfield's *Learning Style Inventory* (1980) utilizes scales in four areas. Conditions of learning includes affiliation (i.e., the need to develop personal relationships with other students and the instructor), structure (i.e., their desire for organization and detail), achievement (i.e., their desire for goal-setting and independence), and eminence (i.e., their orientation towards competition and authority). Content refers to students' preferences for one or more of the following areas: numeric, qualitative, inanimate, and people-oriented. The third and fourth areas assess student preferences for mode (i.e., listening, reading, iconic, and direct experience) and expectations (i.e., the grade students believe they will receive). Anderson and Adams (1992) found that non-traditional students are more competent in peer cooperation, visual and symbolic expression, and narrative, but less comfortable with competition and independence.

Collectively, these studies support the importance of non-cognitive factors and in particular the role of interpersonal relationships in the learning process of African-American students. As a result, large classes should represent a particularly challenging learning environment for African-

American students, and all the more in the context of a large, predominantly White, university setting. Despite the undeniable preference of both instructors and students for smaller classes, however, the literature on class size is fairly inconclusive on the effects of class size on student learning generally. The majority of studies either find no significant differences between student achievement as measured by performance on traditional examinations in small and large classes or slightly favor large classes (Edmondson and Mulder (1924); Hudelson (1928); Nachman and Opochinsky (1958). However, studies that investigate other outcomes such as retention, critical thinking and problem solving, attitude towards instruction and motivation favor smaller classes (Cheydleur (1945); Macomber and Siegel (1957a, 1957b, 1960); Siegel, Adams, & Macomber (1960); Feldhusen (1963)). Because most large classes use the lecture method primarily, the literature on the relative effects of the lecture and discussion methods on student learning tends to corroborate these findings; students taught using the lecture method perform slightly better on factual exams, but on all other outcomes results favor the discussion method (McKeachie et al. (1986)).

These results are entirely consistent with contemporary theory and research on learning which favors active student involvement and engagement as necessary elements and conditions of learning. The literature on large classes acknowledges the obstacles to providing these conditions in large classes: impersonality, (Wulf, Nyquist, & Abbott (1987); Lewis and Woodward (1984); Miner (1992)); instructor inaccessibility (Miner (1992)); the lack of sufficient interaction between instructors and students; and the excessive reliance on the lecture method as the predominant mode of instruction (McKeachie (1978); Frederick (1987); Lewis and Woodward (1984); Geske (1992)). Not only are the conditions for student learning of higher level outcomes difficult to achieve in large classes, but so is the design of evaluation instruments that both measure such outcomes and are easy and quick to grade (Geske (1992); Lowman (1987); McKeachie (1978); Lewis (1994)). Large classes would appear to offer an environment for teaching and learning that falls far short of the ideal, particularly for African-American students for whom a sense of "fit," academic integration, and interpersonal relationships are crucial factors in the learning process.

Methodology

The findings reported here were derived from a reanalysis of data collected for a comprehensive study of issues related to student and faculty perceptions of teaching and learning in large lecture classes. That study investigated discrepancies between the <u>importance</u> students and faculty place on specific teaching/learning practices and their perceptions about the <u>actual</u> <u>occurrence</u> of such practices in large classes with the goal of identifying effective teaching practices for large classes.

Initial results of that study revealed that race/ethnicity was one factor related to student perceptions of instruction in large classes. Since the retention and achievement of minority students are critical concerns for post-secondary institutions, a better understanding of these differences and their correlates was of great interest. Therefore, the following research questions were developed:

(1) Do African American students differ from White students in their ratings of the **importance** of specific teaching/learning practices in college lecture classes? Do these two groups have different perceptions about the extent to which these practices are **actually occurring** in the large classes in which they are enrolled?

(2) Are there any differences between White and African American students in terms of the **discrepancies** they perceive between conditions that are important for their learning and their actual experiences in large classes?

(3) Are there differences between African American students and instructors in terms of their perceptions of the importance and occurrence of specific teaching/learning practices? Is this gap more pronounced than that observed between White students and instructors?

(4) Are there differences between White and African American students in terms of the perceived usefulness of teaching assistants in large classes, or of opportunities for participation in laboratories or recitation sessions in addition to the large lecture setting?

Methods. A combination of qualitative and quantitative methods was used to collect data from students and faculty concerning their perceptions of the quality of teaching and learning in large lecture classes. The primary data sources were student and faculty surveys. However, in order to assess affective as well as cognitive dimensions of teaching and learning in large classes, the study was designed to allow the researchers to observe the dynamics of large classes, and to directly hear subjects describe their reactions and impressions of large classes though the use of focus groups with students, and individual interviews with faculty.

Subjects. Early in the Spring 1996 semester, the UNC-Chapel Hill Center for Teaching and Learning contacted all instructors of classes with enrollments over 70 to describe the study and encourage their participation. Overall, approximately 110 out of 190 instructors of large lecture classes volunteered to participate in one or more facets of the study, including recruiting students for focus groups, providing interviews, allowing their classes to be observed, field testing survey instruments, and providing a portion of a class period for their students to complete surveys.

Twenty-seven undergraduate lecture classes were selected for in-class administration of the student questionnaires. These classes ranged in size from 70 to 368 with an average enrollment of 200, and were distributed across academic disciplines and professional schools in the same proportions found in the overall population of large, lower-level lecture classes at UNC-Chapel Hill that semester. Students were informed about the nature and purpose of the study, and that their participation was voluntary. The vast majority of students in attendance on the day of the in-class administration chose to complete the survey, resulting in approximately 2,530 usable survey responses.

In order to analyze the data by race, those surveys on which students had voluntarily provided their social security numbers were extracted. The responses of approximately two-thirds of the total sample were successfully matched to demographic and academic information available from the registrar's office. Subsequent analyses revealed that the demographic composition and the academic characteristics (grade point average, SAT scores) of this subgroup of respondents were quite similar to that of the population of undergraduate students at this institution during that academic year. Because the numbers of Asian, Hispanic, and Native American students were extremely small, the decision was made to compare only African American students (n = 124) with White students (n = 1,143) for the present study. This group is also the target of extensive recruitment and retention activities at this institution, where twice as many African Americans drop out before the beginning of the sophomore year. A profile of characteristics of the sample used in this analysis is contained in Table 1 of Appendix A.

Faculty surveys were mailed to the instructor of record in each class with an enrollment over 70 during the spring 1996 semester. A total of 91 surveys were returned, for a response rate of approximately 50%. Approximately half of the respondents were senior faculty with well over 15 years of college teaching experience. Additional information on the faculty survey respondents is also provided in Table 1 of Appendix A.

Survey instruments. The student and faculty survey instruments were developed based on the literature on effective college teaching practices, interviews with faculty about obstacles to effective instruction in large classes, and focus groups with students concerning the positive and negative aspects of learning in large class environments. Items were designed to allow faculty and student respondents to describe class characteristics and instructional practices such as teaching methods and level of student involvement in class. A number of items concerned affective aspects of teaching and learning, such as students' comfort with interacting with faculty, teaching assistants, and other students in the class, and beliefs about the importance of learners being recognized as individuals and having their efforts noticed and evaluated fairly. Both instruments were field tested on small groups of students and faculty, with adjustments made to the content and clarity of items. Copies of the student and faculty surveys are contained in Appendix B.

Both student and faculty surveys utilized a dual response format in which respondents used a four-point scale to rate each item on: (a) the importance of this practice or characteristic to student learning, and (b) how well this practice or characteristic described their experiences in large classes. An advantage of obtaining a rating of the importance of an item as well as a rating of its actual occurrence is that a discrepancy score can be calculated to reflect the disparity between "what should be" versus "what is" as perceived by the respondents. Discrepancy scores were calculated by subtracting the importance rating from the class rating for each student. This gives some indication of the extent to which the class experience exceeded or failed to match the level of importance attached to the practice by the student. For example, an item that the student considered highly important for learning but on which he gave a low rating on the class experience would suggest some degree of disappointment with the class. Discrepancy scores also identify practices which students rate their class experience as fairly positive, but consider to be considerably less important to their learning.

Data Analysis. Content analyses were conducted on the focus group, interview, and observation data to identify major themes and issues raised by participants. Survey item responses were analyzed using descriptive statistics, regression analysis, and analysis of variance. In addition, exploratory factor analysis using the principal components method with varimax rotation was conducted as a means of data reduction and to determine if specific constructs could be identified that might explain variance in the responses. Attempts at factor analyzing faculty survey responses were unsuccessful, due in part to the small number of cases.

From the factor analysis of the student importance items, four factors emerged which accounted for over 50% of the variance, and were labeled as follows: (a) "Roles and Responsibilities," related to traditional responsibilities of both faculty and students in lecture classes; (b) "Affective Dimensions," concerning relationships between students and instructors; (c) "Academic Emphasis," describing the degree of academic involvement required by the class, and (d) "Consistency," reflecting instructor adherence to the syllabus and timeliness of returning assignments.

The analysis of class rating items resulted in a five factor solution which accounted for over 54% of the variance. These factors were labeled: (a) "Affective Dimensions," and (b) "Roles and Responsibilities," and (c) "Academic Emphasis," which contained most, but not all, of the items that formed conceptually similar factors as those identified in the importance data. In addition, a separate factor entitled "Instructor Characteristics," emerged which reflected perceptions of the enthusiasm and approachability of the instructor. A fifth factor entitled "Evaluation Practices," consisted of items rating the frequency and fairness of grading practices.

As a result of the factor analyses, factor scores were calculated and used to compare students on the various cognitive and affective dimensions of their large class experiences. A list of the items that loaded on each factor is provided in Tables 2 and 3 of Appendix A.

Findings

The findings of the analyses will be described in response to the individual research questions.

Research Question #1: *Do African American students differ from White students in their ratings of the* ***importance*** *of specific teaching/learning practices in college lecture classes? Do these two groups have different perceptions about the extent to which these practices are* ***actually occurring*** *in the large classes in which they are enrolled?*

Importance of Specific Teaching and Learning Practices in Large Classes

Individual Item Comparisons. As shown in Table 4, African American and White students provided similar responses to a number of the individual items measuring the importance of teaching and learning practices. Regardless of race, students rated several basic instructional elements as highly important for their learning: the approachability and availability of the instructor, appropriate pacing of material, organization of lectures, and the student's responsibility to be attentive. There was also considerable similarity between the two groups on the relatively low importance attached to several tasks that are often difficult in large lecture class settings, such as having written assignments, getting to know other students, the instructor's management of administrative tasks in class, comfort in asking questions in class, and the instructor's knowledge of students' names.

Nevertheless, a number of differences in responses by race were significant. African American students gave **higher** ratings of importance than White students to items reflecting the instructor's awareness of individual effort, availability of office hours, use of a variety of teaching methods, quick return of assignments, and sticking closely to the syllabus. African Americans also regarded the opportunity to participate in class as being more important for their learning than did White students. Items rated by African Americans as being significantly **less** important for their learning in comparison to White students involved the instructor's communication of expectations, fairness of grading practices, instructor's enthusiasm, their own responsibility for learning, and engaging in work that requires more thought than memorization.

Comparison of Importance Factor Scores. The results of the factor analysis of all the importance rating items provided the opportunity to compare student responses in terms of several broader, but conceptually distinct dimensions of teaching and learning in large classes. Figure 1 displays the average factor scores reflecting the importance African American and

White students attached to each of four major areas. It can be observed that African American students had significantly higher average factor scores on **Affective Dimensions**, which indicates a greater concern with the quality of the student-instructor relationship and direct involvement in class activities. Significant race differences also appear on the **Consistency** factor, suggesting that African American students in this study placed more importance on the instructor's adherence to the syllabus and reliability in providing quick feedback on assignments than White students did.

African American students' factor scores were significantly lower than those of White students on the factor that delineates specific responsibilities of instructors and students, **Roles and Responsibilities.** To a lesser extent, African American students' factor scores were also lower than those of White students on the **Academic Emphasis** factor.

Class Ratings of Specific Teaching and Learning Practices

Individual Item Comparisons. In general, students' class ratings of how well these characteristics and instructional practices actually described their large classes were lower than the rating of importance they assigned to that item. As shown in Table 5, both African American and White students gave relatively high ratings on items describing the instructor's management of the course, such as keeping administrative tasks out of the way during class, presenting well-organized lectures, following the syllabus, and holding regular office hours. Both groups gave similarly low ratings to their classes on the variety of teaching methods used, the frequency of written assignments, comfort in asking questions in class, the instructor's knowledge that they were trying, and the frequency of feedback.

Comparison of Class Rating Factors. In terms of perceptions of their class experiences, African American students tended to be more negative than White students, as indicated from their ratings of the class. The differences were significant in several areas, such as availability of help from the instructor, the enthusiasm and approachability of the instructor, the clarity of expectations, quick return of assignments, the fairness and consistency of grading practices, and the opportunity to get to know other students. While both groups rated themselves almost equally in terms of being attentive in class, African American student rated themselves significantly lower than White students on taking responsibility for learning. Only on two items did African American students give the class significantly higher ratings than White students: "the instructor knows who I am," and "the work requires more thought than memorization."

These differences in item ratings take on more meaning after an examination of the race differences in the major factor scores, which are graphically portrayed in Figure 2. In comparison to White students, African American students were significantly more critical of the **Instructor Characteristics** and the **Evaluation Procedures** used in the class, and to a much lesser extent, the fulfillment of student and instructor **Roles and Responsibilities**. They rated the class considerably higher than did White students on Academic Emphasis.

Research Question #2: *Are there any differences between White and African American students in terms of the* ***discrepancies*** *they perceive between conditions that are important for their learning and their actual experiences in large classes?*

In general, student ratings of the quality of their class experiences fell short of the importance that they placed on specific teaching and learning practices. As shown in Table 6, African

American and White students were similarly disappointed with areas such as frequency of feedback, their level of comfort in asking questions, and being personally known by the instructor. The two groups were also consistent in indicating that there were discrepancies, although not quite as large, between importance and class reality in the areas of the physical environment of the classroom, the variety of teaching methods used, and the organization of the lecture. In addition, all students generally rated themselves as being less attentive in class and as taking less responsibility for their own learning than they thought was necessary in order to learn. Students actually gave higher ratings to the class than to the importance of several items, including the chance to participate in class, having written assignments, and doing work that requires more thought than memorization.

However, the discrepancies between the importance of specific elements of the classroom experience for student learning and the quality of the actual class experience were larger for African American students than White students in a number of areas. African American students were significantly more disappointed than White students in several aspects of the instructor-student relationship, such as instructor recognition that they were trying, the approachability of the instructor, and the availability of the instructor to provide help when needed. Other particularly large discrepancies for African Americans were the clarity of the instructor in communicating expectations, the consistency of grading standards, and the chance to get to know other students. African American students were actually more positive about the extent to which the class work required thought rather than memorization in relation to the importance of this characteristic than were White students.

Research Question #3: *Do the perceptions of the importance and occurrence of specific teaching/learning practices in large classes differ between African American students and instructors? If so, is this gap more pronounced than that which is observed between White students and instructors?*

As shown in Table 7, there are a number of areas in which students and instructors differ in terms of their perceptions of the importance of specific aspects of the large class environment. In general, students rate the following practices as more important to student than do instructors: availability of office hours and accessibility of the instructor, being called by name, and clear and consistent grading standards. However, White students' ratings of both the importance and occurrence of these practices were often closer to those of the instructor than were the ratings of African American students. In particular, African American students rated the following practices as more important to their learning than did either the instructors or the White students: regular office hours, frequent feedback, assignments returned quickly, being called by name, and use of a variety of teaching methods. Less important to African American students were the following practices: student attentiveness in class, opportunities for inclass discussion, work requiring more thought than memorization, instructor enthusiasm, being able to ask questions in class, and organization of the lecture. In most but not all areas, there is a larger discrepancy between what instructors and African American students' beliefs about what is important for student learning.

Table 8 displays the differences between instructor ratings of the occurrence of teaching and learning practices in the class and the ratings of African American and White students. On the majority of items, instructors gave a more positive rating than White students, who in turn gave a more positive rating than African American students. The trend was reversed for the following

items, indicating that African American students were more satisfied with the extent to which the practice occurred in class than White students, who in turn were more satisfied than instructors: opportunities for in-class discussions, work that requires more thought than memorization, management of administrative tasks, and use of a variety of teaching methods. African American students rated the class more similarly to instructors than did White students in the amount of work requiring more thought than memorization, and students' attentiveness and use of office hours.

Research Question #4: *Are there differences between White and African American students in terms of the value and perceived usefulness of other resources, such as lab/recitation sections and teaching assistants?*

Having a lab or recitation section connected to the lecture class potentially provides students with more opportunities for discussion and other hands-on activities that reinforce course material covered in the more passive setting of the large lecture class. Therefore, it was of interest to determine if students taking labs/recitations along with their large lecture classes felt more satisfied with the course overall than those who did not have this addition outlet, as measured by a comparison of the class rating factors. For White students, the only difference between the class ratings of students taking associated labs or recitations and those who were not was on the factor measuring Academic Emphasis. White students with labs/recitations rated their class as being much more academically oriented than those without labs/recitations. The same relationship was true for African American students in terms of the Academic Emphasis of the class, as well as for two other class rating factors: Instructor Characteristics and Evaluation Practices. Although the reasons for these differences are not apparent, it appears that African American students who have these additional resources have a more positive overall reaction to the instructor and the classroom procedures.

Based on a comparison of the responses of students whose class utilized a graduate teaching assistant in addition to the instructor, African American students were considerably less satisfied with teaching assistants than were White students. As shown in Table 9, African American students were particularly disappointed in the approachability of teaching assistants in comparison to their White counterparts.

In addition, appears that African American students' satisfaction with their total class experiences is much more tightly related to their impressions of their teaching assistants than is the case for White students. An examination of the correlations between the class rating factors and the ratings of teaching assistant satisfaction revealed the following:

- African American students' perceptions of the approachability and the quality of feedback received from the teaching assistant were more strongly related to ratings on the factor measuring Affective Aspects of the class than were the perceptions of White students concerning their teaching assistants.
- Compared to White students, a stronger relationship existed between the African American students' scores on the class factor measuring student and instructor roles and responsibilities and their ratings of the teaching assistant's knowledge of the subject area, ability to explain concepts, and quality of feedback to students.
- Positive ratings of the instructor (as measured by the factor "Instructor Characteristics" were significantly related to all five ratings of the quality of the teaching assistant. The

correlations between these variables were much smaller for White students. The largest correlation (r = .33) was observed between African American students' ratings of the teaching assistant's approachability and the Instructor Characteristics.

- Scores on the Evaluation factor were much more highly related to ratings of the quality of feedback received and overall satisfaction with the teaching assistant for African American students than for White students.
- African American students' ratings of the Academic Emphasis of the class were much more highly related to the following ratings of the teaching assistant than were those of White students: Overall importance to student learning and enjoyment of the class, knowledge of the subject matter, ability to explain concepts clearly, and quality of feedback received.

Since it is not possible to make inferences about the direction of the relationship from simple correlations, it is unclear whether the quality of the teaching assistant significantly influences students' perceptions of the class, or whether other aspects of the class color students' impressions of the teaching assistants. However, these findings do suggest that teaching assistants might be a more important part of the large class experience to African American students than to White students, and, unfortunately, these students appear to be more disappointed in the quality of the assistance they receive.

Discussion

The following discussion addresses three major themes emerging from the findings--differences, level of satisfaction, and the nature of African-American students as learners--and their implications in light of the relevant research literature organized using Curry's learning style framework. The treatment of each theme builds upon and refines the treatment of each preceding theme, increasing both in detail and specificity, progressing from broad contrasts between African-American and White students to a more fully realized portrait of African-American students as learners in large classes.

The section begins with a discussion of global similarity and difference between African-American students and White students and faculty with respect to their perceptions of teaching and learning as phenomena themselves worthy of analysis and their implications for African-American students as learners. Building upon the existence of difference between these groups, the discussion next addresses differences in overall levels of satisfaction as a natural byproduct of these global differences and their implications for learning. With the preceding as background the discussion turns to a more detailed treatment of specific differences between the perceptions of African-American and White students of themselves as learners and of their actual experiences in large classes. The section concludes with a consideration of the suitability of the large class as a learning environment for African-American students.

The Implications of Difference

Notwithstanding the many similarities between African-American students and White students and faculty noted in the findings, the perceptions of African-American students concerning large classes differ significantly from both White students and faculty in several important ways. African-American and White students rate a number of items differently in terms of their importance to learning and in terms of their actual occurrence in the classroom. And although differences exist between the perceptions of faculty and students generally, these differences are even more pronounced between faculty and African-American students.

The very existence of significant and systematic differences in perception of large classes between majority and minority students and a predominantly White faculty is worthy of note in and of itself because it may be a manifestation of deeper, underlying differences. These differences may in turn affect other experiences minority students have and collectively, their broader experience of the university. Presumably students' prior acculturation--at home, school and in their communities and families, their previous academic experiences, and racial identification create a set of expectations concerning learning experiences and environments. Further, as we indicated above, differences in perception may arise in part from simply being in the minority at the institution.

In any event, the existence of systematic difference and the sources from which it arises offers one piece of evidence of lack of "fit" and academic integration that further evidence would substantiate. These constructs are of interest, of course, because they portend challenges to effective learning for minority students of which lower retention rates and grade point averages are two conspicuous manifestations.

General Level of Satisfaction as an Indicator of Academic Integration

Throughout the study the overriding burden of evidence indicates that African-American students are less satisfied with their large classes than White students. Discrepancies between class and importance ratings are one indication of the general level of satisfaction with large classes. Zero or positive ratings, in which class ratings either match or exceed importance ratings, indicate general satisfaction; on the other hand, negative discrepancies, in which class ratings are less than importance ratings, indicate general dissatisfaction, the degree of which depends upon the size of the discrepancy: the more negative, the greater the degree of dissatisfaction. In general, for all students and faculty alike, class ratings fell short of the importance ratings placed on specific teaching and learning practices. This is not surprising, particularly in the context of the large class environment. Indeed, given the challenges to effective teaching and learning in these classes, it would be far more surprising if this were not the case. Interestingly, however, where there are significant discrepancies between those posted by African-American and White students, the discrepancies reported by African-American students are virtually always larger when negative and smaller when positive. This indicates that African-American students are generally less satisfied with their large classes than White students.

Relatedly, African-American students tended to be more negative than White students about their large class experience as indicated by comparative class ratings. On ten out of twenty-three survey items, African-American students reported significantly lower class ratings than White students; on only one item were they more positive.

Finally, African-American students report less satisfaction with their teaching assistants than White students. They rate significantly lower their general satisfaction with TAs, TAs' knowledge of the subject matter, their ability to explain concepts well, and their approachability.

As indicated in the literature review, academic integration comprises a variety of factors including student satisfaction with faculty relationships, ease of developing close personal relationships, the perception that faculty are good teachers, and general satisfaction with instruction. Consequently, in the current study, African-American students' comparatively lower level of satisfaction with large class instruction provides additional evidence for greater

difficulties in academic integration which in turn may affect retention rates and achievement adversely.

African-American and White Students' Perceptions of Themselves as Learners

Despite a number of similarities in the self-perceptions of African-American and White students regarding the importance of various teacher and student practices to learning, there are also systematic differences between them. Most noteworthy is the variety of evidence that points to the importance of affective (or non-cognitive) aspects of the learning process to African-American students. As indicated in the Methodology section, an exploratory factor analysis of the importance ratings on the student instrument revealed four distinct factors: **Roles and Responsibilities** (the reciprocal relationship between faculty and students in the learning process), **Affective Dimensions** (the importance of interpersonal relationships in the learning process), **Academic Emphasis** (the essential academic nature of the learning process), and **Consistency** (the importance of predictability in the learning process). As shown in Figure 1, African-American students had significantly higher average factor scores on Affective Dimensions than White Students pointing to the importance of instructor recognition of personhood and effort, opportunities to participate in class, getting to know other students, and instructor approachability to their learning.

Relatedly, as indicated in the Findings section, African-American students' class ratings are more closely related to their level of satisfaction with their teaching assistants than for White students. This is particularly interesting in light of the fact that African-American students rate teaching assistants more harshly than White students. In the context of large classes, teaching assistants typically lead either recitation or lab sessions that accommodate anywhere from fifteen to forty students, appreciably fewer students than the large class lecture. Because of the more advantageous instructor/student ratio in these sessions, students may have more personal contact with the teaching assistant than the course instructor. Because African-American students' general level of satisfaction with the class appears more closely related to their satisfaction with teaching assistants, this would appear to indicate that the quality of their personal relationship with and their general assessment of their primary instructional conduct is more important to the learning process than for White Students. Once again, this underscores the importance of affective aspects in the learning process.

These findings parallel closely similar findings throughout the learning style and achievement literature on the role of interpersonal relationships in the learning process of African-American students. Using Curry's framework, we have already noted the potential importance of the institutional context on the learning and achievement of African-American students through the social interaction component of the framework. But whatever component of the framework we examine and the relevant literature on African-American students as learners associated with it, the importance of people in the learning process emerges: the importance of the surrounding social environment and other people to field dependent learners (basic personality traits); in the Kolb model Accommodator's reliance on other people for the processing of information (information processing); and non-traditional students' relative competence in peer cooperation (instructional preference).

Shaded somewhat differently, the findings also suggest that compared to White students African-American students appear to perceive others--whether faculty, teaching assistants, or fellow students rather than themselves--as more important to their learning. Of the items African

American students judge more important to their learning, all of them emphasize the role of the instructor in the learning experience: holding regular office hours, recognizing individual effort, using a variety of teaching methods, following the syllabus, and returning assignments quickly. In keeping with this observation African-American students had higher average factor scores on Consistency indicating that predictability was more important to their learning. White students on the other hand rated items that tended to emphasize either reciprocal or student responsibility: clear expectations of performance, consistent grading standards, and personal responsibility for learning. Similarly, with respect to importance factor loadings, White students placed more importance on Roles and Responsibilities or the reciprocal responsibilities of instructors and students than African-American students.

While related to the literature reviewed above, the perception of the importance of others as opposed to the self in learning points to the motivation literature (see Graham, 1995, for an excellent review). A number of race-comparative studies of African-American and White adolescents and adults have noted a tendency towards an external locus of control among African-Americans. Individuals with an internal locus of control think of themselves as completely responsible for their own behavior and reinforcement. In contrast, people with an external locus of control tend to believe that powerful others, luck, or circumstances beyond their control are responsible for outcomes. While the effects of an external or internal locus of control on general levels of motivation are not completely clear, an internal locus of control tends to support higher levels of motivation and achievement.

African-American Students and Large Classes

In general, large classes are not optimal learning environments. The predominant teaching method in these classes, the lecture, does not engender active involvement of students, a factor associated with outcomes such as long-term retention of information, critical thinking, and problem solving. Further, large classes pose additional obstacles to student learning: instructor inaccessibility, impersonality, insufficient interaction between instructors and students, and limitations on practical means of evaluating students. The literature on learning and achievement for African-American students suggests that non-cognitive factors and in particular the role of interpersonal relationships play an important part in the learning process of African-American students. Consequently, we would expect African-American students to be particularly sensitive to the challenges of the large class environment. Collectively, the findings of the current study suggest they are. African-American students are significantly more sensitive to the impersonality of large classes, and their level of satisfaction more closely linked with their assessment of teaching assistants. In addition, they rate use of a variety of teaching methods as more important to their learning. At the same time, they indicate greater disappointment with how they are evaluated in large classes. And the current study suggests that African-American students regard others--whether faculty, teaching assistants, or other students--as more critical to the learning process. Interestingly, of the seven items on which African-American students recorded larger discrepancy scores than White students, four loaded on the affective factor. Not surprisingly they report lower levels of satisfaction and consequently frustration with their large classes as well.

Given the findings of the current study and their relationship to the rest of the learning and achievement literature for African-American postsecondary students, institutions that utilize large classes should consider a variety of strategies for overcoming the obstacles they pose to learning particularly among African-American students. These strategies might include the following:

- additional training for faculty teaching large classes on, for example, implementing alternative teaching strategies and evaluation methods, personalizing large classes, and the vulnerability of segments of the student population to the challenges of large classes

- as part of freshman orientation, sessions on how to get the most out of large classes

- mentoring systems particularly for African-American students with faculty members and African-American upperclassmen as mentors

- alternatives to large class instruction for vulnerable segments of the student population

- more intensive counseling and support services for vulnerable segments of the student population including African-American students.

Limitations of the Study

The larger study of which this study was a part was designed to obtain information on teaching and learning in large classes, an area which has not been extensively studied previously. In addition, the researchers wished to test the effectiveness of a combination of methods of assessing teaching and learning as tools with which to provide information not usually captured about how students and instructors perceive and react to conditions in large class settings. Therefore, the emphasis was on exploration rather than confirmation, and consequently the assumptions, procedures, and findings reported here must be considered in light of a number of known limitations.

It was impossible given the scope of this study to compare the efficacy of specific teaching/learning practices based on their relationship to achievement or actual gains in content area knowledge. Because the study was conducted on "live" classes with care taken to limit researcher intrusiveness, there was no available pretest measure of knowledge, and no way to control across sections of the same courses or different courses for variations in content and method, experience of the instructor, etc.

Individual instructor characteristics that were not measurable here probably contributed substantially to students' experiences in the class and their learning. It can also be assumed that individual differences in students that were not measured here had some bearings on their reactions to the instructor and the instructional situation, and therefore colored their perceptions of importance or quality of aspects of the class.

The selection of instructor and student participants was not random, but instead was reliant upon volunteering and consent to being surveyed....The extent to which volunteers differed from those who did not agree to or volunteer to be in the study cannot be determined, but it is entirely likely that these participants are motivated in ways that are related to their responses to the surveys. Therefore, generalizability to all instructors and students in large classes might be limited.

The study did not investigate or control for other variables that may have influenced the findings such as prior academic preparation or whether students were the first generation of their family to seek postsecondary education. Similarly further studies may wish to investigate the effects of

being a minority in an institution on perceptions of learning: for example, White students in predominantly African-American institutions.

Although the study explores the perceptions of African-American and White students and faculty in large classes, these large classes are embedded in an institutional context which research suggests influences the learning process of some students. By inclusion of the achievement literature on African-American students, we expanded the social interaction component of Curry's learning style model to include these influences. The current study takes place in a predominantly White institutions in which African-American students are a distinct minority. Research has shown that for African-American students in such institutional environments non-cognitive factors play a distinct role in academic success as measured by retention rate and grade point average. Consequently, some or all of the differences we observe in the current study between African-American students and White students and faculty may be due less to the large class environment than to the institutional environment in which these large classes are embedded. In other words, the proper unit of analysis for this study is not simply faculty and students in large classes but rather faculty and students in large classes in a predominantly White public institution of higher education in the southeastern region of the United States. Consequently the results of this study may not be generalizable to African-American students in predominantly African-American institutions, for example.

It was not possible to test for differences in perceptions between African-American and White students experimentally because there were no known "small versions" and "large versions" of the same courses that we could have used to make direct comparisons of processes or outcomes. Further research may wish to investigate experimentally whether perceptions differ similarly across classes of all sizes.

Selected References

Allen, W.R. (1986). Gender and campus race differences in Black student academic performance, racial attitudes, and college satisfaction. Atlanta: Southern Education Foundation.

Anderson, J.A. & Adams, M. (1992). Acknowledging the learning styles of diverse student populations: Implications for instructional design. In L.L.B. Border & N.V. Chism (Eds.). **Teaching for diversity,** (pp. 19-34). San Francisco: Jossey-Bass Publishers.

Benjamin, L.T., Jr. (1991). Personalization and active learning in the large introductory psychology class. **Teaching in Psychology, 18(2)**, 68-74.

Buchanan, R.W. & Rogers, M. (1990). Innovative assessment in large classes. **College Teaching, 38(2)**, 69-73.

Cameron, B.J. (1991). Using tests to teach. **College Teaching, 39(4),** 154-155.

Canfield, A. (1980). **Learning styles inventory manual.** Ann Arbor, MI: Humanics Media.

Cheydleur, F.C. (1945, August). Criteria of effective teaching in basic French courses. **Bulletin of the University of Wisconsin.**

Curry, L. (1983, April). An organization of learning styles theory and constructs. Paper presented at the annual meeting of the American Educational Research Association, Montreal, Canada. (ERIC Document Reproduction Service No. ED 235 185).

Davis, R.B. (1991). Social support networks and undergraduate student academic-success-related outcomes: A comparison of black students on black and white campuses. In Allen W.R. et al. (Eds.). **College in Black and White: African-American Students in Predominantly Whiteand in Historically Black Public Universities,** (pp. 143-157). Albany: State University of New York Press.

Edmondson, J.B. & Mulder, F.J. (1924). Size of class as a factor in university instruction. **Journal of Educational Research, 9,** 1-12.

Fleming, J. (1984). Blacks in college: A comparative study of students' success in Black and White institutions. San Francisco: Jossey-Bass.

Frederick, P.J. (1987). Student involvement: Active learning in large classes. **New Directions for Teaching and Learning, 32**, 45-56.

Geske, J. (1992). Overcoming the drawbacks of the large lecture class. **College Teaching, 40,** 151-154.

Gibbs, J.T. (1974). Patterns of adaption among Black students at a predominantly White university. Selected case studies. **American Journal of Orthopsychiatry, 44(5),** 728-740.

Hudelson, E. (1928). **Class size at the college level.** Minneapolis, MN: University of Minnesota Press.

Irvine, J.J. & York, D.E. (1995). Learning styles and culturally diverse students: A literature review. In J.A. Banks (Ed.) **Handbook of Research on Multicultural Education.** (pp. 484-497). New York: Macmillan Publishing USA.

Jackson, K.W. & Swan, L.A. (1991). Institutional and individual factors affecting black undergraduate student eprformance: Campus race and student gender. **College in Black and White: African American Students in Predominantly White and in Historically Black Public Universities**, (pp. 127-142). Albany: State University of New York Press.

Knapper, C. (1987). Large classes and learning. **New Directions for Teaching and Learning, 32,** 5-15.

Kolb, D. (1994). Learning styles and disciplinary differences. In Feldman, K.A. and Paulsen, M.B. (Eds.). **Teaching and learning in the college classroom** (pp. 151-164). Needham Heights: Ginn Press.

Kolb, D. (1976). Learning styles inventory. Boston: McBer and Co.

Lewis, K.G. (1982). The large (100+) class in the university: A study of the instructional techniques used and instructor/student attitudes towards such classes. Condensed report of results of the Large Class Analysis Project (LCAP). University of Texas at Austin.

Lewis, K.G. (1994). Teaching large classes (How to do it well and remain sane). In K.W. Pritchard & R. McLaren Sawyer (Eds.). **Handbook of College Teaching: Theory and Applications.** (pp. 319-343). Westport, CT: Greenwood Press.

Lowman, J. (1987). Giving students feedback. **New Directions for Teaching and Learning, 32,** 71-83.

Macomber, F.G. & Siegel, L. (1957a). A study of large-group teaching procedures. **Educational Research, 32,** 220-229.

Macomber, F.G. & Siegel, L. (1957b). Experimental study in instructional procedures. **Porgress Report No. 2.** Oxford, OH: Miami University.

Macomber, F.G. & Siegel, L. (1960). Experimental study in instructional procedures. **final Report.** Oxford, OH: Miami University.

McKeachie, W.J. et al. (1986). **Teaching and learning in the college classroom: A review of the research literature.** Ann Arbor: Regents of the University of Michigan.

McKeachie, W.J. (1980). Class size, large classes, and multiple sections. **Academe (February),** 24-27.

Matthews, D.B. & Hamby, J.V. (1995). A comparison of the learning styles of high school and college/university students. **The Clearing House, 68(4),** 257-261.

Meredith, G.M. (1980). Impact of lecture size on student-based ratings of instruction. **Psychological Reports, 46**, 21-22.

Miner, R. (1992). Reflections on teaching a large class. **Journal of Management Education, 16(3),** 290-302.

Nachman, M. & Opinchinsky, S. (1958). The effects of different teaching methods: A methodological study. **Journal of Educational Psychology, 49**, 245-249.

Nettles, M.T. (1991). Racial similarities and differences in the predictors of college student achievement. **College in Black and White: African American Students in Predominantly White and in Historically Black Public Universities**, (pp. 75-94). Albany: State University of New York Press.

Olstad, R. et al. (1981). Inhibitors to achievement in science and mathematics by ethnic minorities. Bethesda, MD: (ERIC Document Reproduction Service, No. ED 223 404).

Prom, S.E. (1982). Salient content and cognitive performance of person- and thing-oriented low income Afro-American children in kindergarten and second grade. (A doctoral dissertation, Howard University, Washington, D.C.).

Ramirez, M. III (1982, May). Cognitive styles and cultural diversity. Paper presented at the Annual Meeting of the American Education Researhc Associatin, New York.

Shade, B.J. (1984). Afro-American patterns of cognition: A review of research. Paper presented at the Annual Meeting of the American Educational Research Association, New Orleans, LA (ERIC Document Reproduction Service No. ED 244 025).

Siegel, L., Adams, J.F., & Macomber, F.G. (1960). Retention of subject matter as a function of large-group instructional procedures. **Journal of Educational Psychology, 51**, 9-13.

Tracey, T.J. & Sedlacek, W.E. (1985). The relationship of noncognitive variables to academic success: A longitudinal comparison by race. **Journal of College Student Personnel, 26(5)**, 405-410.

Williams, D.D. et. al. (1985). University class size: Is smaller better? **Research in Higher Education, 23,** 307-318.

Witkin, H.A. (1976). Cognitive style in academic performance and in teacher-student relations. In S. Messick and Associates (Eds.). **Individuality in learning**. San Francisco, CA: Jossey-Bass Publishers.

Witkin, H.A. et al. (1977). Field-dependent and field-independent cognitive styles and their educational implications. **Review of Educatinal Research, 47,** 1-64.

Witkin, H.A. & Goodenough, D.R. (1981). **Cognitive styles: essence and origins.** New York: International Universities Press.

Wulff, D.H. et al. (1987). Students' perceptions of large classes. **New Directions for Teaching and Learning, 32,** 17-37.

APPENDIX A:

Tables and Figures

Tables

Table 1: Profile of Student and Instructor Survey Respondents

Table 2: Factor Loadings for Importance Rating Items on the Student Survey

Table 3: Factor Loadings for Class Rating Items on the Student Survey

Table 4: Comparison of Importance Ratings: African American and White Students

Table 5: Comparison of Class Ratings: African American and White Students

Table 6: Differences Between African American and White Students on Perceived Discrepancies Between the Importance and Actual Occurrence of Teaching/Learning Practices

Table 7: Student-Instructor Differences in Ratings of Importance to Student Learning

Table 8: Student-Instructor Differences in Ratings of Occurrence in Class

Table 9: Differences Between African American and White Student Ratings of Teaching Assistants

Figures

Figure 1: African American and White Student Differences: Importance Factors

Figure 2: African American and White Student Differences: Class Factors

Table 1
Profile of Student and Instructor Survey Respondents

Students (n = 1,289)

Race	White	90.4%			
	African American	9.6%			
Gender	Female	64.9%	Male	35.1%	
Year in School	Freshmen	33.9%			
	Sophomores	26.8%			
	Juniors	20.6%			
	Seniors	18.7%			
Class Required?	To meet a general education requirement	38.6%			
	To meet requirements for a specific major	40.6%			
	An elective	20.8%			

Instructors (n = 91)

Rank	Full Professor	45.0%					
	Associate Professor	17.6%					
	Assistant Professor	9.9%					
	Lecturer (non-tenure track)	17.6%					
	Graduate Student	9.9%					
Tenure Status	Tenured	59.3%					
	Not tenured/not on track	40.7%					
College Teaching Experience	< 5 yrs.	19.8%	5-10 yrs.	14.3%	10-15 yrs.	8.8%	15 + yrs. 57.1%
Years at This Institution	< 5 yrs.	28.6%	5-10 yrs.	16.5%	10-15 yrs.	12.1%	15 + yrs. 42.9%
Years Teaching This Course	< 5 yrs.	30.8%	5-10 yrs.	14.2%	10-15 yrs.	11.0%	15 + yrs. 44.0%
Teaching Assistant Support	Yes	73.6%	No	26.4%			
Discipline	Fine Arts	3.3%					
	Humanities	15.2%					
	Sciences	23.1%					
	Social Sciences	34.0%					
	Health Professions	20.0%					
	Other Professions	5.4%					

Table 2
Factor Loadings for Importance Rating Items on the Student Survey

Total Variance Accounted for = .501

	Factor Loadings
Roles and Responsibilities	
I am attentive in class.	.661
Material covered at a comfortable pace.	.642
Expectations communicated clearly.	.602
I take responsibility for my own learning.	.596
Grading standards objective and consistent	.564
Lectures are well-organized	.560
Physical environment is conductive to learning	.481
Instructor is enthusiastic	.456
Affective Dimensions	
Instructor knows who I am.	.705
Instructor knows I am trying	.632
I have a chance to participate in class	.586
I am confortable asking questions in class	.548
Instructor holds regular office hours	.541
Instructor is approachable	.530
I can get help from the instructor when I need it.	.528
I get to know other students in class	.458
Academic Emphasis	
Assignments require more thought than memorization	.695
We have frequent written assignments	.675
Administrative tasks do not get in the way	.524
Variety of teaching methods used	.481
Consistency	
We follow the syllabus closely	.713
Assignments are returned in a timely manner	.612

Table 3
Factor Loadings for Class Rating Items on the Student Survey

Total Variance Accounted for = .55

	Factor Loadings
Affective Aspects	
Instructor knows I am trying	.761
Instructor knows who I am	.747
I am comfortable asking questions in class	.644
I have a chance to participate in class	.532
I get to know other students	.490
Roles and Responsibilities	
I am attentive in class	.626
Physical environment is conducive to learning	.587
Lectures are well-organized	.578
Material covered at a comfortable pace	.544
I take responsibility for my own learning	.488
Administrative tasks do not get in the way	.488
Instructor Characteristics	
Instructor holds regular office hours	.670
I can get help from the instructor when I need it	.625
Instructor is approachable	.541
Instructor is enthusiastic	.428
Evaluation Practices	
Assignments are returned in a timely manner	.676
Grading standards are objective and consistent	.543
Expectations are clearly communicated	.435
We follow the syllabus closely	.426
I get frequent feedback on my performance	.420
Academic Emphasis	
A variety of teaching methods are used	.619
We have frequent written assignments	.618
Assignments require more thought than memorization	.570

Table 4
Comparison of Importance Ratings:
African American and White Students

	African American	White	Significance of Difference ($p <$)
I can get help from instructor	3.67	3.62	ns
Instructor is approachable	3.66	3.66	ns
Expectations communicated clearly	3.62	3.72	.0700
Material covered at a comfortable pace	3.62	3.65	ns
Lectures are well-organized	3.61	3.66	ns
Grading standards fair and consistent	3.60	3.76	.0060
Assignments are returned quickly	3.56	3.37	.0020
I am attentive in class	3.55	3.59	ns
Instructor knows I'm trying	3.52	3.33	.0020
Instructor is enthusiastic	3.42	3.56	.0400
Physical environment is conducive	3.35	3.27	ns
I take responsibility for learning	3.34	3.50	.0100
Frequent feedback	3.31	3.25	ns
Comfort asking questions in class	3.20	3.18	ns
Instructor follows syllabus closely	3.20	2.99	.0100
Instructor holds regular office hours	3.13	2.75	.0001
Variety of teaching methods used	3.02	2.85	.0500
Instructor knows who I am	2.86	2.73	ns
Administrative tasks do not get in the way	2.85	2.89	ns
Work requires thought not memorization	2.73	2.97	.0100
Chance to participate in class	2.62	2.47	.0900
I get to know other students	2.37	2.42	ns
Have written assignments	2.18	2.22	ns

Table 5
Comparison of Class Ratings:
African American and White Students

	African American	White	Significance of Difference ($p <$)
Work requires thought, not memorization	3.49	3.24	.001
Instructor is enthusiastic	3.39	3.60	.010
Admin tasks do not get in the way	3.36	3.32	ns
Instructor follows syllabus closely	3.36	3.32	ns
Instructor holds regular office hours	3.16	3.21	ns
Lectures are well-organized	3.15	3.27	ns
I take responsibility for learning	3.14	3.37	.0010
I can get help from instructor	3.13	3.34	.0070
Instructor is approachable	3.12	3.38	.0010
I am attentive in class	3.00	3.09	ns
Material covered at a comfortable pace	2.98	3.16	.0300
Physical environment conducive	2.83	2.87	ns
Grading standards fair and consistent	2.81	3.29	.0001
Assignments are returned quickly	2.81	3.21	.0001
Chance to participate in class	2.79	2.62	ns
Expectations communicated clearly	2.74	3.09	.0001
Have written assignments	2.55	2.43	ns
Variety of teaching methods used	2.55	2.53	ns
Comfort asking questions in class	2.35	2.39	ns
Instructor knows I'm trying	2.27	2.22	ns
Frequent feedback	2.26	2.35	ns
Instructor knows who I am	2.24	2.00	.0200
I get to know other students	1.96	2.22	.0070

Table 6

Differences Between African American and White Students on Perceived Discrepancies Between the Importance and Actual Occurrence of Teaching/Learning Practices

Note: Discrepancy scores equal the class rating minus the importance rating. Negative values indicate the actual class rating fell short of the student's rating of the importance of the practice to his or her learning.

	African American	White	Sig. of Difference ($p <$)
The instructor knows I'm trying	-1.25	-1.12	.05
Frequent feedback	-1.06	-0.90	ns
Expectations are communicated clearly	-.0.88	-0.62	.004
Questions can be answered in class	-0.85	-0.80	ns
Grading standards fair and consistent	-0.80	-0.48	.001
Assignments are returned quickly	-0.74	-0.15	.0001
Material covered at a comfortable pace	-0.64	-0.49	.08
Instructor knows who I am	-0.61	-0.73	ns
Instructor is approachable	-0.56	-0.28	.002
I am attentive in class	-0.55	-0.51	ns
I can get help from instructor	-0.55	-0.28	.002
Physical environment is conducive	-0.52	-0.40	ns
Variety of teaching methods used	-0.47	-0.32	ns
Lectures are well-organized	-0.46	-0.39	ns
I get to know other students	-0.41	-0.19	.03
I am responsible for my own learning	-0.20	-0.13	ns
Instructor is enthusiastic	-0.04	0.04	ns
Instructor holds regular office hours	0.05	0.46	.0001
Instructor follows syllabus closely	0.15	.33	.08
Chance to participate in class	0.18	.15	ns
Have written assignments	0.38	.22	ns
Administrative tasks do not get in the way	0.52	.43	ns
Work requires thought not memorization	0.74	.27	.0001

Table 7
Student-Instructor Differences in Ratings of Importance to Student Learning

Practice	Instructors	White Students	African American Students
Students are attentive in class.	3.70	3.59	3.55
Students take advantage of office hours.[1]	2.83	3.62	3.67
Opportunity for in-class discussion.	3.06	2.47	2.62
Work requires more thought than memorization.	3.61	2.97	2.73
I call students by name.	2.63	2.73	2.86
I use a variety of teaching methods.	2.96	2.85	3.02
I give periodic written assignments.	3.09	2.22	2.18
I give frequent feedback on student performance.	3.24	3.25	3.31
I communicate my expectations clearly.	3.67	3.72	3.62
Lectures are well-organized.	3.67	3.66	3.61
I am accessible to students.[2]	3.51	3.66	3.66
Grading standards are clear and consistent.	3.62	3.76	3.60
Administrative tasks do not get in the way.	3.06	2.89	2.85
I am enthusiastic about the course material.	3.80	3.56	3.42
I answer most students' questions in class.[3]	3.52	3.18	3.20
Assignments are returned in a timely manner.	3.37	3.37	3.56
I hold regular office hours.	3.24	2.75	3.13
I follow the syllabus fairly closely.	3.18	2.99	3.20

[1] Student version: "I can get help from the instructor if I need it."
[2] Student version: "The instructor is approachable."
[3] Student version: "I am confortable asking questions in class."

Table 8
Student-Instructor Differences in Ratings of Occurrence in Class

Practice	Instructor	White Students	African American Students
Students are attentive in class.	2.81	3.09	3.00
Students take advantage of office hours.[1]	1.97	3.34	3.13
Opportunity for in-class discussion.	2.28	2.62	2.79
Work requires more thought than memorization.	3.10	3.24	3.49
I call students by name.	2.13	2.00	2.24
I use a variety of teaching methods.	2.49	2.53	2.55
I give periodic written assignments.	2.67	2.43	2.55
I give frequent feedback on student performance.	2.84	2.35	2.26
I communicate my expectations clearly.	3.40	3.09	2.74
Lectures are well-organized.	3.44	3.27	3.15
I am accessible to students.[2]	3.31	3.34	3.13
Grading standards are clear and consistent.	3.42	3.29	2.81
Administrative tasks do not get in the way.	2.88	3.32	3.36
I am enthusiastic about the course material.	3.68	3.60	3.39
I answer most students' questions in class.[3]	3.41	2.39	2.35
Assignments are returned in a timely manner.	3.33	3.21	2.81
I hold regular office hours.	3.27	3.21	3.16
I follow the syllabus fairly closely.	3.48	3.32	3.36

[1] Student version: "I can get help from the instructor if I need it."
[2] Student version: "The instructor is approachable."
[3] Student version: "I am confortable asking questions in class."

Table 9
Differences Between African American and White Student Ratings of Teaching Assistants

	African American	White	Sig. of Difference
TA's importance to learning and enjoyment of the class	2.37	2.62	.05
General satisfaction with TA	2.34	2.80	.0001
TA's knowledge of subject	3.04	3.24	.05
TA explains concepts well	2.74	2.97	.05
TA approachability	2.83	3.21	.001
TA gives helpful feedback	2.80	2.93	ns

Figure 1

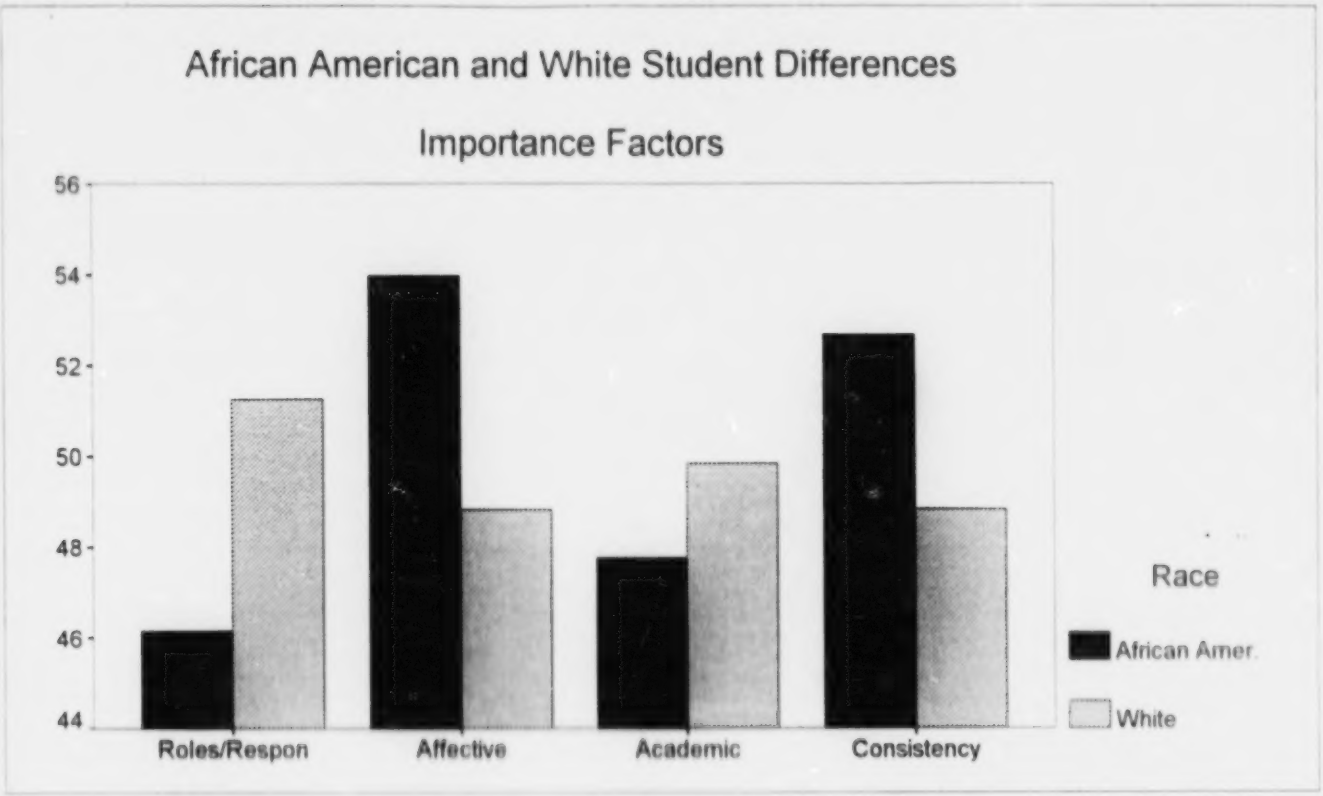
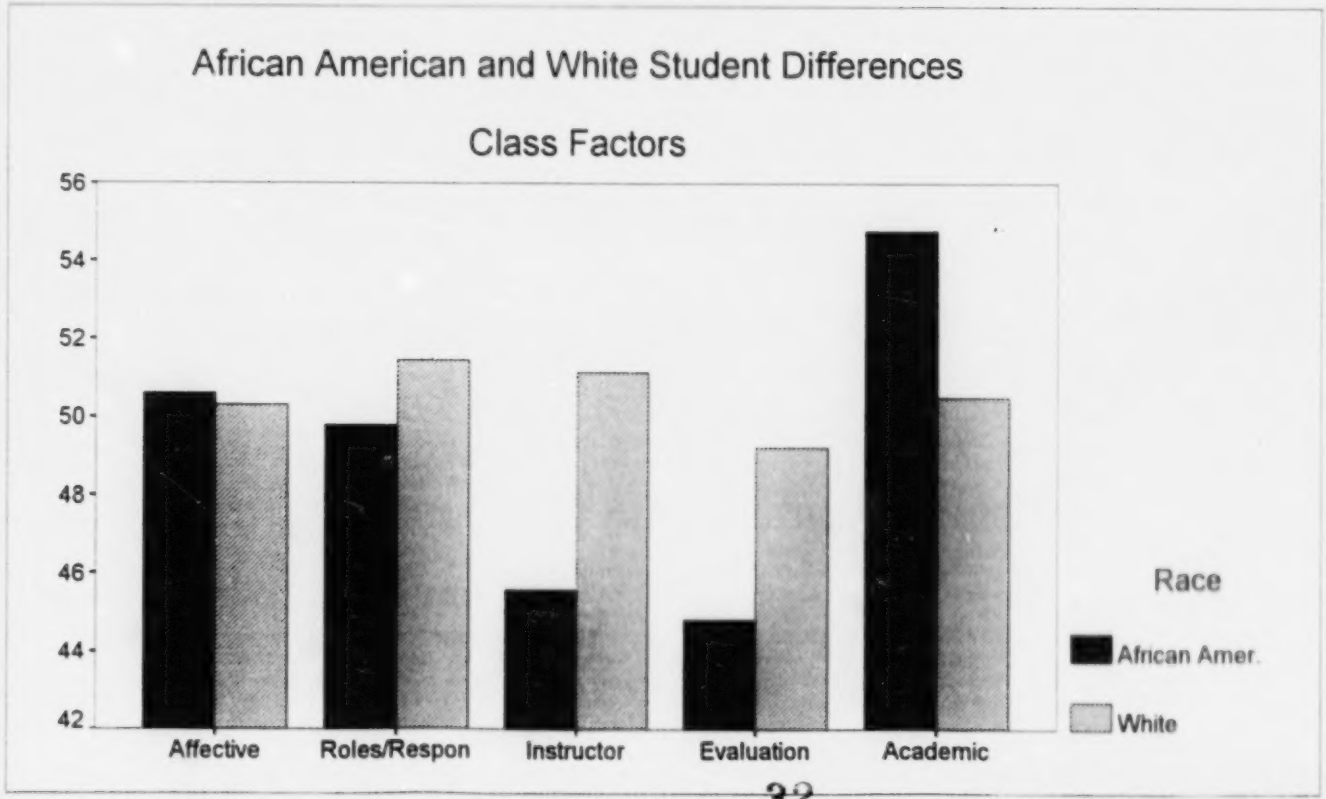


Figure 2



APPENDIX B:

Student and Instructor Survey Instruments

Student Survey of Large Classes

The Center for Teaching and Learning in cooperation with The Office of Institutional Research is conducting a study of large classes at UNC. We want to find out about the experience of students and faculty who take and teach large classes. Further, we want to identify teaching practices that make large classes particularly effective because they enhance student learning. This survey will provide important information about the experience and perceptions of students who take large classes at UNC.

PLEASE RECORD ALL YOUR RESPONSES ON THE SEPARATE MACHINE-SCORABLE ANSWER SHEET. PLEASE ANSWER WITH REFERENCE TO THIS CLASS.

Section I. Please record YOUR SOCIAL SECURITY NUMBER in the field labelled "Identification Number" and the COURSE CODE supplied in class in the field labelled "Sequence Number." Leave the NAME field blank.

Section II. **TEACHING AND LEARNING.** Your learning preferences can affect how you respond to large classes. Please rate each statement below in terms of: 1. how important it is for your ownlearning regardless of class size; and 2. how well it describes this large-enrollment class. Record your answers beginning with item 1. on the answer sheet.

Importance to my learning **1=not important** **2=fairly important** **3=important** **4=very important**		**How well it describes this class** **1=not well** **2=fairly well** **3=well** **4=very well**
1. 1 2 3 4	The instructor holds regular office hours.	2. 1 2 3 4
3. 1 2 3 4	Assignments are returned in a timely manner.	4. 1 2 3 4
5. 1 2 3 4	I can get help from the instructor if I need it.	6. 1 2 3 4
7. 1 2 3 4	We follow the syllabus fairly closely.	8. 1 2 3 4
9. 1 2 3 4	I get frequent feedback on my performance.	10. 1 2 3 4
11. 1 2 3 4	Lectures are well-organized.	12. 1 2 3 4
13. 1 2 3 4	I get to know other students in the class.	14. 1 2 3 4
15. 1 2 3 4	Objective and consistent grading standards are used.	16. 1 2 3 4
17. 1 2 3 4	The instructor communicates his/her expectations clearly.	18. 1 2 3 4
19. 1 2 3 4	The instructor utilizes a variety of teaching methods (e.g, lecture, discussion, small groups).	20. 1 2 3 4
21. 1 2 3 4	The instructor is enthusiastic about the course material.	22. 1 2 3 4
23. 1 2 3 4	I have a chance to participate in class.	24. 1 2 3 4
25. 1 2 3 4	The instructor knows who I am.	26. 1 2 3 4
27. 1 2 3 4	We have periodic written assignments.	28. 1 2 3 4
29. 1 2 3 4	Assignments and exams require more thought than memorization.	30. 1 2 3 4
31. 1 2 3 4	Administrative tasks (e.g., roll, handing back papers) do not get in the way of teaching.	32. 1 2 3 4
33. 1 2 3 4	I am attentive during class.	34. 1 2 3 4
35. 1 2 3 4	I feel comfortable asking questions in class.	36. 1 2 3 4
37. 1 2 3 4	The physical environment of the classroom is conducive to learning.	38. 1 2 3 4
39. 1 2 3 4	I take responsibility for my own learning.	40. 1 2 3 4
41. 1 2 3 4	We cover the course material at a comfortable pace.	42. 1 2 3 4
43. 1 2 3 4	The instructor knows I'm trying.	44. 1 2 3 4
45. 1 2 3 4	The instructor is approachable.	46. 1 2 3 4

PLEASE TURN OVER

Section III. GRADUATE TEACHING ASSISTANTS

47. Does this class have a TA (TAs)?
1. Yes 2. No

If you answered "Yes" to 47., please answer the questions below.

48. How important is the TA (TAs) to your learning and enjoyment of this course?
1. Very important 2. Important 3. Fairly important 4. Not important

49. In general, how satisfied are you with your TA (TAs)?
1. Very satisfied 2. Satisfied 3. Fairly satisfied 4. Not satisfied

Indicate below how satisfied you are with your TA with reference to these specific areas:

50. Knowledge of subject matter
1. Very satisfied 2. Satisfied 3. Fairly satisfied 4. Not satisfied 5. Not applicable

51. Ability to explain concepts well
1. Very satisfied 2. Satisfied 3. Fairly satisfied 4. Not satisfied 5. Not applicable

52. Approachability
1. Very satisfied 2. Satisfied 3. Fairly satisfied 4. Not satisfied 5. Not applicable

53. Ability to give helpful feedback
1. Very satisfied 2. Satisfied 3. Fairly satisfied 4. Not satisfied 5. Not applicable

Section IV. GENERAL INFORMATION.

54. My student classification is:
1. Freshman 2. Sophomore 3. Junior 4. Senior 5. Other

55. My gender is:
1. Male 2. Female

56. This course is:
1. A perspectives course 2. Required for my major 3. An elective

57. What approximate portion of classes for this course have you attended?
1. Less than half 2. Half 3. Three-quarters 4. Virtually all

58. Where do you normally sit in this class?
1. Front 2. Middle 3. Back

59. What was the size of your high school senior class?
1. Less than 100 2. 100-299 3. 300 or more

60. What grade do you anticipate in this course?
1. A 2. B 3. C 4. D 5. F

61. Are you enrolled in a recitation or lab section for this course?
1. Yes 2. No

THANK YOU FOR HELPING US TO IMPROVE TEACHING AT CAROLINA!

INSTRUCTOR SURVEY OF LARGE CLASSES

The Center for Teaching and Learning in cooperation with The Office of Institutional Research is conducting a study of large classes at UNC. We want to find out about the experience of students and instructors who take and teach large classes. Further, we want to identify teaching practices that make large classes particularly effective because they enhance student learning. This survey will provide important information about the experience and perceptions of instructors who teach large classes at UNC.

PLEASE RECORD ALL YOUR RESPONSES FOR QUESTIONS 1-46 ON THE SEPARATE MACHINE-SCORABLE ANSWER SHEET. RECORD YOUR RESPONSES TO QUESTIONS 47-49 ON THE SEPARATE SHEET PROVIDED.

Section I. We have recorded a code for your course in the field labelled "Sequence Number" in the top lefthand corner of the machine-scorable answer sheet. Please fill in your LAST NAME in the field labelled "Name." It is **not** necessary to fill in the "Identification Number" field.

Section II. **GENERAL INFORMATION**. Please record your answers beginning with entry 1. on the answer sheet.

1. My rank is:
   1. Full Prof. 2. Associate Prof. 3. Asst. Prof. 4. Lecturer 5. Graduate Student

2. Do you have tenure?
   1. Yes 2. No

3. How many years have you been teaching college students?
   1. Less than 5 yrs. 2. 5-10 yrs. 3. 10-15 yrs. 4. More than 15 yrs.

4. How many years have you been teaching at UNC?
   1. Less than 5 yrs. 2. 5-10 yrs. 3. 10-15 yrs. 4. More than 15 yrs.

5. How many years have you been teaching this course?
   1. Less than 2 yrs. 2. 3-6 yrs. 3. 7-10 yrs. 4. More than 10 yrs.

Section III. **RESOURCES.** The following questions concern resources that may be available to you as an instructor of a large class. Please record your answers beginning with entry 6. on the answer sheet.

6. Do you have a TA(s) for this class?
   1. Yes 2. No

7. If you have a TA(s), what is his/her (their) role? (Indicate all that apply.)
   1. Lecturer 2. Recitation/lab leader 3. Grader 4. Tutor 5. Other

8. From the roles you indicated above, what is the TA's primary role?
   1. Lecturer 2. Recitation/lab leader 3. Grader 4. Tutor 5. Other

9. Are you satisfied with the availability of equipment and technology to support your teaching of this class?
   1. Very satisfied 2. Satisfied 3. Somewhat satisfied 4. Not satisfied

10. How conducive is the physical environment of this classroom to student learning?
    1. Very conducive 2. Conducive 3. Somewhat conducive 4. Not conducive

PLEASE TURN OVER

Section IV. **TEACHING AND LEARNING.** Please rate each statement below in terms of: 1. how important it is in promoting student learning; and 2. how accurately it describes your large-enrollment course..

Importance to student learning 1 = not important 2 = fairly important 3 = important 4 = very important		**How well it describes my class** 1 = not well 2 = fairly well 3 =well 4= very well
11. 1 2 3 4	Students take advantage of office hours.	12. 1 2 3 4
13. 1 2 3 4	Assignments and exams require more thought than memorization.	14. 1 2 3 4
15. 1 2 3 4	I follow the syllabus fairly closely.	16. 1 2 3 4
17. 1 2 3 4	I am accessible to students.	18. 1 2 3 4
19. 1 2 3 4	There is adequate opportunity for in-class discussion.	20. 1 2 3 4
21. 1 2 3 4	Administrative tasks (e.g., roll, handing back papers) do not get in the way of teaching.	22. 1 2 3 4
23. 1 2 3 4	I give frequent feedback on student performance.	24. 1 2 3 4
25. 1 2 3 4	I answer most students' questions in class.	26. 1 2 3 4
27. 1 2 3 4	I hold regular office hours.	28. 1 2 3 4
29. 1 2 3 4	Lectures are well-organized.	30. 1 2 3 4
31. 1 2 3 4	Students are attentive during class.	32. 1 2 3 4
33. 1 2 3 4	I am enthusiastic about the course material.	34. 1 2 3 4
35. 1 2 3 4	Assignments are returned in a timely manner.	36. 1 2 3 4
37. 1 2 3 4	I call students by name.	38. 1 2 3 4
39. 1 2 3 4	I communicate my expectations clearly.	40. 1 2 3 4
41. 1 2 3 4	Grading standards are clear and consistent.	42. 1 2 3 4
43. 1 2 3 4	I use a variety of teaching methods (e.g., lecture, discussion, small groups).	44. 1 2 3 4
45. 1 2 3 4	I give periodic written assignments.	46. 1 2 3 4